

### Registration of 'Verl' Eastern Gamagrass

'Verl' eastern gamagrass [*Tripsacum dactyloides* (L.) L.] (Reg. no. CV-243, PI 543890) is unique among commercial eastern gamagrass cultivars in that it is a fertile triploid ( $2n = 3x = 54$ ) that reproduces predominantly via apomixis. It was produced from a controlled pollination of a gynomonocious sex form (GSF) diploid ( $2n = 2x = 36$ ) with a monoecious tetraploid ( $2n = 4x = 72$ ). Verl is recommended for pasture or hay in the eastern and southern United States where appropriate management is used to prevent damage to the plant stands. Verl was released in February 2005 by the USDA-ARS in cooperation with the Oklahoma Agricultural Experiment Station and the USDA-Natural Resources Conservation Service (NRCS).

Verl was selected for its female fertility (seed set), male fertility (pollen stainability), and forage production attributes from 243 F<sub>1</sub> progeny resulting from the cross GSF-1 (PI 483447)/WW-1724. Seed set and pollen stainability averaged 68 and 18%, respectively. The average caryopsis weight was 2.43 mg. In addition, 95% of the open-pollinated progeny from Verl were identical in appearance to the maternal parent indicating a high degree of apomictic reproduction.

Verl was tested as accession 'FT-II' which was released along with three other fertile triploid germplasm lines (FT-I, FT-III, and FT-IV) in 1991 by the USDA-ARS and the Oklahoma Agricultural Experiment Station (Dewald et al., 1992). It was assigned PI 543890 at that time. In the germplasm release document the following statement was made "These fertile triploids have good apparent forage production characteristics and should be evaluated for adaptation throughout the southeastern states" (USDA-ARS, 1991).

Small plot field evaluations of Verl were conducted in the eastern and southern United States from 2001 to 2003 at the USDA-NRCS Plant Materials Centers at Brooksville, FL; Manhattan, KS; Coffeetown, MS; Elsberry, MO; Corning, NY; and Knox City, TX, and the USDA-ARS Southern Plains Range Research Station at Woodward, OK. Averaged across these locations, the forage dry matter yield of Verl (7890 kg ha<sup>-1</sup>) was 11% greater than that of 'Pete' eastern gamagrass ( $P < 0.05$ ). Depending on the length of growing season and the amount of available moisture, Verl can be harvested 2 to 4 times yr<sup>-1</sup> on a 45-d harvest interval. The seasonal average crude protein (95 g kg<sup>-1</sup>) and in vitro digestible dry matter (520 g kg<sup>-1</sup>) was not significantly different from 'Pete' in field trials ( $P > 0.05$ ) in 2001–2002.

Verl has excellent seed production. In a replicated experiment at Woodward in 2001, Verl produced 178 kg pure seed ha<sup>-1</sup>. This was significantly greater than Pete eastern gamagrass ( $P > 0.01$ ) which produced 122 kg ha<sup>-1</sup>. Similarly at Woodward in 2003, Verl produced an equivalent seed yield of 170 kg ha<sup>-1</sup> from a 0.25 ha seed increase block.

Verl is susceptible to feeding damage from the maize billbug, *Sphenophorus maidis* (Chittenden), and the southern cornstalk borer, *Diatraea crambidoides* (Grote). These insects reduce seed production of eastern gamagrass as their populations increase in the field. Verl is possibly susceptible to *Rhizoctonia*, *Pythium*, and *Bipolaris* species. These organ-

isms were recovered from dying plants at Coffeetown, MS, in April 2003, but inoculations of these organisms would be required to verify if they were the causal organisms responsible for death of the plants.

Verl is named for Mr. Verl H. Louthan, retired Agricultural Research Technician, USDA-ARS Southern Plains Range Research Station, Woodward, OK. Mr. Louthan was instrumental in eastern gamagrass research characterizing its biology, agronomic potential, and the development of this cultivar.

Seed of Verl is deposited in the National Plant Germplasm System, where it will be available for research purposes, including the development and commercialization of new cultivars. Appropriate recognition is requested if this release contributes to the development of a new breeding line or cultivar. Pedigreed seed of Verl will be limited to Breeder, Foundation, Registered, and Certified classes. One generation of seed increase will be allowed for each seed class. Breeder seed will be maintained by the USDA-ARS. Foundation seed will be under the direction of the Oklahoma Foundation Seed Stocks, Inc., Department of Plant and Soil Sciences, Oklahoma State University, Stillwater, OK 74078. U.S. Plant Variety Protection will not be sought for Verl.

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### References

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USDA-ARS. 1991. Notice of release of fertile triploids (FT-I, FT-II, FT-III, and FT-IV) of eastern gamagrass, *Tripsacum dactyloides* (L.) L. USDA-ARS and Oklahoma Agric. Exp. Stn.

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